What is claimed is:

1. A polishing apparatus comprising:

a polishing table having a polishing surface;

a top ring for holding a substrate and pressing a surface of the substrate against said polishing surface to polish said surface of said substrate;

at least one optical measuring device disposed adjacent to the outer peripheral portion of said polishing table and below said polishing surface of said polishing table for measuring the thickness of a layer formed on said surface of said substrate; and

at least one notch formed in the peripheral portion of said polishing table, said notch allowing light emitted from said optical measuring device to pass therethrough and be incident on said surface of said substrate and allowing light reflected from said surface of said substrate to pass therethrough and be incident on said optical measuring device.

2. A polishing apparatus according to claim 1, wherein said substrate has a semiconductor device threron.

3. A polishing apparatus according to claim 1, wherein said top ring is swingable between an inner area and an outer area on said polishing table so that the light emitted from said optical measuring device is incident on a position ranging from the outer circumferential edge to the central portion of said substrate.

4. A polishing apparatus according to claim 1, wherein when said top ring is swung to a maximum, the area of said substrate which projects outwards beyond the outer circumferential edge of said polishing table is not more than 40% of the entire area of said surface, being polished, of said substrate.

5. A polishing apparatus according to claim 1, further comprising a nozzle for supplying a cleaning liquid to said optical measuring device.

6. A polishing apparatus comprising:

a polishing table having a polishing surface;

a top ring for holding a substrate to polish the substrate by a relative motion between the substrate and said polishing surface;

at least one optical measuring device for measuring the thickness of a layer formed on said surface of the substrate by applying light to said surface of the substrate; and

a moving mechanism for moving at least one of said top ring and said polishing table during polishing operation;

wherein said moving mechanism moves said top ring or said polishing table to the position where the central portion of the substrate is exposed toward said optical measuring device, for allowing said optical measuring device to measure the central portion of the substrate.